

**ENCLOSURE**

**Response to Comments and Addendum to the SMC OU2 Supplemental  
Remedial Investigation Workplan Deliverables**

**General Comments**

1. **Comment:** EPA prefers that the revised human health risk assessment and the screening level ecological risk assessment be performed after collection of the data gap samples and the subsequent report. Since much of the previous data is quite old (1990/1995), it is likely that surface soils have been disrupted and certainly, surface water/sediment data can considerably change over time as stated on page 23, Section 2.2.1.6. In order to evaluate site conditions as they currently exist, current data should be used quantitatively (2009/2011) while the older data (1990/1995) may be used qualitatively.

**Response:** It was agreed during the negotiation of the Administrative Order on Consent (AOC) that existing data can and should be used. This was based upon the general understanding that using the existing data was collected under NJDEP oversight, and that the data would put the project farther down the road towards remediation. The suggestion to “redo” current data is contrary to that agreement, and would lead to rewinding the project and delaying remediation. We think that complying with the AOC and the associated agreements is best for the project.

We agree that it is appropriate to resample surface water, and have proposed the same. We have also proposed additional soil sampling to build upon the 2009/2011 data, as appropriate. Please note that the majority of the soil in the Former Production Area is under paving or buildings, and has not been appreciably disturbed. Further, the soil in the Restoration Areas have been maintained “in state” following the ecological capping in those areas.

With that being said, please note that the OU2 Human Health Risk Assessment will be performed after collection of additional data. Similarly, the Baseline Ecological Risk Assessment will be performed after the collection of additional data. The BERA may include revisions to the SLERA, as appropriate. Both risk assessments will quantitatively build upon existing data with the supplemental data obtained from proposed investigative activities.



2. **Comment:** While nature and extent samples are collected for different purposes than human health samples, it would be helpful to collect data gap samples that would satisfy both needs. As such, for direct contact to surface soils, EPA uses the top 0-2 feet. For direct contact to subsurface soils, EPA uses 2-10 feet. For sediment, 0-6 inches may be used.

**Response:** TRC understands that, where surface soil sampling is proposed, that the EPA would like us to sample 0-12", and, where surface sediment sampling is proposed, that the EPA would like us to sample 0-6". We concur and will do so.

3. **Comment:** A total of 13 surface soil background samples have been proposed from 0-6 inches. EPA proposes the collection soil background samples down to ten feet as this is the bottom of the required sample interval for the human health risk assessment. This information will be helpful during the remedial design phase when determining the depth of soil treatment/excavation, if necessary.

**Response:** The background soil samples are intended to be used as part of the BERA. For this application, deeper samples are not helpful. Also, the background soils samples are located throughout the community (generally in areas of public access). Due to access issues, a sampling interval of 0-12" is much more practical, and more respectful of the community. If we had to go to 10 feet, we would need a drill rig, which would substantially reduce our access and ability to collect samples, and could be viewed as more disruptive to the community. We propose to sample background soils locations 0-12".

4. **Comment:** Please provide a table with COPCs, the associated screening criteria that were considered, and the selected criteria (most conservative).

**Response:** We understand that our submission included multiple volumes (as required in the AOC) that, by design, the volumes must be used "in concert". This can make finding certain information somewhat challenging. We included COPC tables (including screening criteria) in the QAPP, Worksheets #15-1 through 15-15. Portions of these tables were also included in Figures 3 through 13 of the OU2 Supplemental RI Work Plan.

5. **Comment:** Aside from the Former Manpro-Vibra Degreasing Unit, it is unclear what the past operations in the remainder of the Former Production Area may have been. A large data gap seems to exist on the western portion of this area. EPA requests that additional soil samples be collected on the western portion of the Former Production Area.

**Response:** The buildings west of the area (Buildings D201, D203(C), and D203(F)) were used for office space and warehousing. This area is largely covered by buildings and paving, which have been in place for a long time. We think that the buildings/paving are protective of the soil and the soil data. We feel



that the data indicates that the area is not of particular environmental concern and that the data is representative and is helpful in quantifying risk. Further the groundwater chromium concentrations in this area are relatively low (generally approaching the EPA screening level).

6. **Comment:** EPA requests that 1 or 2 additional soil samples be collected east of RA-14 and RA-13 in the Southern Area as this appears to be a data gap.

**Response:** The key driver which indicated that additional sampling was appropriate for this area was exceedance of soils screening criteria for Vanadium. As discussed below, the screening levels for Vanadium have been raised by the EPA, after submission of our document. Increasing the screening levels results in fewer exceedances in this area (see revised Figure). Because Vanadium is less of a concern, based on the new screening numbers, we think that the proposed 2 samples is more than adequate.

## **Response to Specific Comments**

### **1. Section 1.4.3, Sediment, 1<sup>st</sup> Paragraph, Page 11.**

**Comment:** The paragraph noted that grain size was one of the parameters analyzed for in the sediment samples. However, the information was not discussed in the narrative or was the result included in the report. Please include results and narrative of the grain size. This is important as metal concentrations tend to increase with decreasing grain size.

**Response:** To clarify, the 1996 did note sediment grain size, simply indicating that the grain size throughout the study area was relatively consistent, and were generally smaller sized particles. No additional notes are available.

As part of our proposed sediment sampling, we will note grain size in more detail and include this information in our report.

### **2. Section 1.6.2, Potential State Chemical-Specific ARARs/TBCs, Soils, Page 13.**

- a. **Comment:** TRC states that the NJDEP Soil Remediation Standards are not Applicable or Relevant and Appropriate Requirements (ARARs), but rather criteria “to be considered” (TBC) for soils. This is unacceptable. Consistent with N.J.A.C. 7:26D, the NJDEP Soil Remediation Standards are ARARs and shall be considered as such by TRC.

**Response:** TRC will consider the NJDEP Soil Remediation Standards as ARARs. Please note that we already included exceedance of the NJDEP SRS in our Figures and included the results in our proposed sampling rationale.

- b. **Comment:** TRC references the Non-Residential Direct Contact Soil Remediation Standards. Be advised that pursuant to the New Jersey Technical Requirements for Site Remediation, N.J.A.C. 7:26E-6.1 (e), the NJDEP requires that institutional controls be required whenever a restricted use remedy or a limited restricted use remedy is used to remediate a site. Institutional controls may include, without limitation, structure, land, and natural resource use restrictions, well restriction areas, classification exception areas, deed notices, and declarations of environmental restrictions.

**Response:** TRC is aware of the need for institutional controls relative to Non-Residential Standards. A deed notice is planned for the site. We will work toward the deed notice as the RI/Risk Assessment/FS process continues.

- c. **Comment:** The paragraph discusses the NJDEP Remediation Standards for soil



that became effective on June of 2008. However, the discussion does not refer to the site-specific Impact to Groundwater Soil Remediation Standards. It should be noted that, at some point, it will be necessary for the respondents to demonstrate to the Department that contaminants in Site soils do not impact groundwater by one of the methods prescribed in the Departments Guidance Documents

[http://www.state.nj.us/dep/srp/guidance/rs/igw\\_intro.htm](http://www.state.nj.us/dep/srp/guidance/rs/igw_intro.htm)

**Response:**

The purpose of the OU2 Supplemental Investigation is to collect data in order to quantify human health and ecological risk for soil, and to achieve delineation, sufficiently to support remedial decisions.

Also, the primary COPCs in soil are chromium and Vanadium. No impact to groundwater (IGW) standards exist for chromium and Vanadium (or other metals), so application of IGW standards for these compounds has no effect.

It is important to consider OU2 (soil, sediment, surface water) and OU1 (groundwater) with the proper perspective. The practical purpose of considering IGWs for OU2 would be to identify/delineate potential “sources” in soil, insofar as additional work in the soils would help remediate OU1. OU1 has been undergoing remediation for 25 years via pump and treat. Aggressive work is currently being implemented to accelerate OU1 remediation via in situ remediation. We have already considered the potential for soil sources as part of OU1 remediation, and do not feel soil sources exist. OU2 has undergone remediation via excavation and disposal of chromium soil from the former lagoons. Since sources have been removed from OU2, and OU1 remediation is well underway, we do not feel that further investigating soils sources would be worthwhile to help OU1.

**3. Section 2.0, Summary of Available OU2 Data, Page 14.**

**Comment:** This section of the report and the referenced figures 3 to 9 show the distribution of soil-sampling locations within each of the key areas of the site. The figures present sample results for selected soil-sampling locations (by green- or red-filled circles) for particular chemical constituents (i.e., VOCs, TALs, vanadium). From the figures, it is clear that different groups of locations were selected for particular chemical analysis. However, without knowing the rationale for the selection of locations for particular chemical analyses, it is not clear just by inspecting the pattern of results shown in the figures whether or not delineation of soil contamination was complete. Potential data gaps are not apparent from the figures, which merely serve to summarize results from various sampling events. It would be more informative and useful to provide a discussion on the rationale for selecting soil-sampling locations for particular analyses. This would also apply to sediment and surface-water samples discussed further on in the report.



**Response:** As stated previously, the purpose of the OU2 Supplemental RI is to gain sufficient data to characterize risk, and achieve delineation, sufficiently to support remedial decisions. The substantial available data, augmented with the proposed supplemental sampling, will provide data for this purpose. We feel that the plethora of soil data on the site already generally meets this purpose. These data were pulled from a series of reports that describe in more detail the rationale for previous sample location selection. The sampling strategy was agreed to with the NJDEP at the time of sampling. We feel that it is more important to move forward, rather than rethink previous detailed decisions. Further, we feel that the samples proposed fulfill the need of the AOC and the risk assessments.

**4. Section 2.1, Soil Data, 1<sup>st</sup> Paragraph, Page 15**

**Comment:** It is stated that the analytical results for soil samples collected near the Hudson Branch are provided in figure 10. Figure 10 shows sampling locations adjacent to the stream and metal-analysis results associated with these locations. However, there is no other discussion in the report pertaining to this sampling event, particularly regarding the objectives of the sampling, the selection of sampling locations and the rationale for their selection. Please discuss further.

**Response:** The NJDEP provided the direction to collect these “overbank” data in order to begin to assess out-of-stream impacts. Generally, these samples were taken from 0-6”, from between 20 to 80 feet away from the stream centerline.

TRC has proposed overbank sampling to better assess out-of-stream impacts.

**5. Section 2.1.1.1, VOCs, Page 15**

**Comment:** The report indicates that 34 soil samples were collected from the Former Production Area for VOC analysis and that no VOCs were detected above the TBCs. The referenced Figure 3 shows 20 locations within this Area as having no exceedences for VOCs (designated with a green-filled circle). Several of these locations include two or three soil samples. The report should clarify in the text that a soil-sampling location can consist of multiple soil samples due to vertical sampling.

**Response:** The paragraph is herein revised to read as follows, for clarity:  
“A total of 34 soils samples were collected from 20 locations within the Former Production Area for analysis of VOCs. Several of these locations included two or three samples collected from several depth intervals. Some of the samples were collected from the former Manpro Vibra Degreasing Unit, which is a known source of TCE groundwater contamination at the site. No VOCs were detected in the soil samples from the Former Production Area above the screening criteria.”



**6. Section 2.1.3.3, Pesticides/PCBs, Page 18**

- a. **Comment:** Please clarify discrepancy. 2.5 ppm is identified as the one exceedance of total PCBs. Figure 5 indicates two exceedances at location RA-34 of Aroclor-1248 (1.9 ppm) and Aroclor-1254 (1.5 ppm).

**Response:** Total PCBs for sample RA-34 in Figure 5 should be 3.4 ppm (the addition of the Aroclor-1248 and the Aroclor 1254).

- b. **Comment:** Additional samples should be taken near RA-34 to delineate any potential source of PCB contamination.

**Response:** A total of 59 soil samples were collected from the SMC Facility for PCBs. Only one sample (RA-34) showed PCB concentration exceeding the ARARs/TBC. This exceedance was by a nominal amount (measured value of 3.4 ppm versus an NJDEP standard of 1 ppm and an EPA risk screening criteria of 0.74 ppm). Based on these findings, TRCs feels that the PCB hit is de-minimus. This will be appropriately considered in the risk assessments, without the need for additional data.

**7. Section 2.1.1.4, Metals, 1<sup>st</sup> Paragraph, Page 16**

**Comment:** There is no NJDEP NRDCSRS listed for hexavalent chromium. The source of the value cited in the RI is the previous, unpromulgated NJDEP NRDCSCC.

**Response:** We concur. The soils samples for hexavalent chromium will be compared to the EPA screening criteria.

**8. Section 2.1.1.4, Metals, 2<sup>nd</sup> Paragraph, Page 15**

**Comment:** Please ensure that all that the most recent screening level tables are being utilized in the Report. The most recent EPA Regional Screening Level Table (June 2011, is available at: [http://www.epa.gov/reg3hwmd/risk/human/rb-concentration-table/Generic-Tables/pdf/master\\_sl\\_table\\_run\\_JUN2011.pdf](http://www.epa.gov/reg3hwmd/risk/human/rb-concentration-table/Generic-Tables/pdf/master_sl_table_run_JUN2011.pdf) . The value presented for Vanadium is not correct.

**Response:** TRC is aware that these tables were published shortly after we prepared and submitted our documents. We have prepared a revised Figure 8, which is included herein as part of the addendum.





**9. Section 2.1.5.1, Facility Wide Results and COPCs, 2<sup>nd</sup> Paragraph, Page 20**

**Comment:** The paragraph states that hexavalent chromium was detected in 22 of 231 samples collected across the Site at concentrations above screening levels. In the referenced Figure 7, hexavalent chromium soil sample results show only 7 samples (in 4 locations) as having exceedences. Please clarify.

**Response:** The Facility soil results are shown in both Figure 7 and Figure 9 (Figure 9 shows the lagoon area, which has the majority of data, and the balance of the hexavalent chromium exceedance of screening levels).

**10. Section 2.3, Sediment Data, Page 25**

**Comment:** The report does not explain why the sediment-sample locations shown in the referenced Figures 12 and 13 were selected, or what the objectives of the sediment sampling were. Unlike soil borings that generally represent an in-place material, streambed sediments are eroded soil and rock material transported mainly by gravity and overland flow to the stream channel. Sediments can originate from virtually anywhere within the drainage basin, but mainly from areas adjacent to the stream and from the headwaters area. The detritus that make up stream sediments may already be contaminated prior to entering the stream channel, or may become contaminated after deposition in the stream if affected by contaminated groundwater or surface water. Their distribution in the streambed depends on channel shape and stream-flow magnitude. All these factors need to be considered in selecting sediment sampling locations.

**Response:** We concur regarding the nature and forces regarding sediment contamination, and incorporated these thoughts in the sampling strategy. Generally, we propose to take samples along a stream cross section so that we can characterize the cross section (in the sediment, surface water, and overbank areas). The spacing of the cross sections was decided with the NJDEP with the previous sampling rounds (1990s and 2009), which we still consider to be reasonable for the stream study. Additionally, collection at the same locations can allow some comparison of data over time. At each section, we have proposed a surface water sample to determine current conditions. Because the 2009 sediment sampling provided sediment data from 0-6" (and previous studies indicated that some contamination exists deeper), we propose to sample for sediments from 18-24", generally seeking vertical information. We propose overbank samples (0-6" and 18-24") seeking horizontal and vertical information in the overbank.

Please keep in mind that this stream is relatively small (a person can jump over it at most locations) and flat. There are some areas that broaden, which would be areas of more deposition. In these areas, we have included additional sediment sampling, to address deposition forces on contamination distribution.





The recent potential breach of Burnt Mill Pond warrants addition consideration of available data for the pond. As the NJDEP has learned recently, please note that the city of Vineland studied Burnt Mill Pond in 2006 and determined that pond sediments met NJDEP residential standards. Vineland dredged portions of Burnt Mill Pond thereafter. The NJDEP is working to ascertain the extents of dredging.

We note that Burnt Mill Pond is currently under study as directed by the State of New Jersey due to dam safety issues. The pond may be dewatered for some period of time. We note the following data from previous environmental studies performed by SMC:

- a. Four samples were taken from the pond centerline in 1995. Because the centerline is likely to be the lowest elevation, the centerline is likely to stay submerged (and therefore protected from human contact).
- b. The 0-6" results have an approx average total chromium concentration of 161 ppm. The EPA BTAG screening level is 43.4 ppm, and the NJDEP eco screening level is 26 ppm, each for total chromium. The 1995 concentrations are only slightly above the ecological *screening* levels.
- c. The 0-6" results have an approx average hexavalent chromium concentration of 0.94 ppm. The hexavalent chromium concentrations are more than 100 times less than the total chromium. Although these are sediments, and would likely remain as submerged sediments upon pond lowering, for the sake of comparison, the NJDEP residential soil standard for hex chromium is 240 ppm. The concentrations are far below that standard. The EPA risk screening level for hex chromium in soils is 0.29 ppm. The concentrations are only slightly above the *screening* value.
- d. The total chromium concentrations along Hudson Branch stream (which feeds into Burnt Mill Pond from the east) attenuate significantly. It has not been determined whether the chromium concentrations in Burnt Mill Pond is attributable to the Site. Further, there are elevated metals concentrations in Burnt Mill Branch, which feeds into Burnt Mill Pond from the north, so there apparently may be regional metals issues.

Because the chromium data seem to provide no immediate health risk, and because the dam safety issues have a more immediate public safety concern, TRC proposes that, in the event that flood/dam safety work is occurring, that we temporarily hold off on the Burnt Mill Pond sampling (and any sampling downstream) until the dam safety issues are resolved. We would still plan on doing the Burnt Mill Branch and Hudson Branch stream studies as soon as practical.

**11. Section 2.3, Sediment Data, Page 25**

**Comment:** It is indicated that sediment samples will be collected in the Hudson Branch and the Burnt Mill Pond to evaluate current sediment quality conditions in addition to vertical delineation. However, the sediment samples proposed are to be collected from the depth interval of 1.5 to 2 feet to accomplish the vertical delineation for these two water bodies. Additional samples should be collected from the depth interval of 0 to 0.5 feet to evaluate the current sediment quality conditions.

**Response:** We concur that we should sample Burnt Mill Branch from 0-6". Because the 2009 sediment data for Hudson Branch included 0-6", we feel that the 18-24" zone for Hudson Branch will provide good information (particularly for vertical characterization).

**12. Section 3.0, Supplemental OU2 RI Activities, 2<sup>nd</sup> Paragraph, Page 30**

**Comment:** Please reference Uniform Federal Policy for Quality Assurance Project Plans, Intergovernmental Data Quality Task Force, March 2005 (as indicated on Page 2-7 of QAPP) instead of USEPA Region 2 Guidance for the Development of Quality Assurance Project Plans for Environmental Monitoring Projects (dated April 2004).

**Response:** Via this addendum, we herein reference the Uniform Federal Policy for Quality Assurance Project Plans, Intergovernmental Data Quality Task Force, March 2005.

**13. Section 3.0, Supplemental OU2 RI Activities, 3<sup>rd</sup> Paragraph, Page 30**

**Comment:** Please specify that field activities will be conducted in accordance with applicable state and federal regulations and standardized operating procedures (SOPs).

**Response:** We concur with this reference.

**14. Section 3.4, Soil Sampling, Page 32-39**

**Comment:** The proposed soil samples will be collected from a depth of 0-6 inches. However, for assessment of ecological risk, the preferred sampling depth for soils is 0-12 inches as this is the zone of soil in which the majority of ecological receptors will receive their exposure to soil contamination.

**Response:** As stated in the general comments, we will collect surface soil samples from the 0-12" interval.



**15. Section 3.4.1.1, Former Production Area, Page 32**

**Comment:** Four surface soil samples are proposed (SB-84 through SB-87) along the northern property line. It may be necessary to include a fifth location north of building D203D to delineate data gap in this area where no samples have previously been collected.

**Response:** The samples were proposed to help delineate Vanadium. Because the Vanadium screening level has changed since the OU2 document submission, there are fewer. See revised Figure 8. Based on these revisions, TRC feels that sampling along this area is no longer necessary and proposes to delete it from the workplan.

**16. Section 3.4.1.2, Soil Sampling Equipment and Procedures, 1<sup>st</sup> Paragraph, Page 33**

**Comment:** The report indicates that, “A soil boring will be advanced from the center of each former basin (Borings SB-93 and SB-94) and continuous soil samples will be collected to the top of the water table.” Please define the proposed soil boring intervals.

**Response:** A surface soil sample (0-12”) will be collected from each boring. One subsurface soil sample will be collected from each boring. The subsurface boring will be collected in the zone immediately above the water table, unless field screening (odor, staining etc) identifies a potential contamination zone, in which case the subsurface soil sample will be collected from the perceived contaminated zone.

**17. Section 3.4.1.3, Eastern Storage Areas, Page 33**

**Comment:** The sampling approach for property line surface soil sampling is to collect samples and analyze them on an expedited basis. If results exceed the criteria, additional samples will be collected to delineate the contamination. This approach is acceptable.

However, sample SB-95 is being collected approximately 150 feet away from the property line. This is done in part due to an off-site exceedance for vanadium and hexavalent chromium from two separate sample results. Delineation and the ultimate remediation must factor in both metals and the limits of contamination.

**Response:** Based on the most recent EPA Regional Screening Level Table (June 2011), vanadium is no longer an exceedance for soil samples near the facility property line and proposed sample SB-95. Please see the revised Figure 8. Proposed sample SB-95 will be moved closer to sample SS-5 to delineate the horizontal extent for chromium at this location. The location for proposed sample SB-95 is shown on the revised Figure 15 (Proposed Soil Sample Locations).



**18. Section 3.6, Sediment Sampling, Page 41**

**Comment:** The report indicates that Sediment samples will be collected along transect lines which will be located at selected previous stations (SW/SD-01, SD-10, SD-13, SD-15, SD-18, SW/SD-04, and SD-23). Further justification should be provided regarding the selection process for these sampling locations.

**Response:** Please refer to the response for #10, wherein the rationale is further discussed.

**19. Proposed Soil Samples, Table 5**

**Comment:** Table 5 identifies each of the proposed soil samples and the sample collection protocols (based on specific flow diagrams). Flow Diagram A-1 requires the homogenization of the soils collected in a stainless steel bowl. While this is acceptable for soil samples that will be analyzed for metals, it is not acceptable for VOC analysis. A number of soil samples proposed for TCL VOC analysis are listed as following Flow Diagram A-1. The correct flow diagram should be A-2.

**Response:** Table 5 has been revised and attached, properly referencing Diagram A-2.

**20. Figures 3-9**

**Comment:** It is not clear whether or not the sample locations SS-9, SS-8, SS-7, SS-6, and SS-5 are associated with Eastern Storage Area, the Former Production Area, or relate to another activity. It is also not clear whether or not sample locations RA-52, RA-51, RA-57, SS-3, RA-56, SS-2, SS-1, and SS-4 are associated with the Eastern Storage Area or were part of another sampling effort. Please clarify.

**Response:** The samples you referenced were studied as part of the Eastern Storage Areas. The Eastern Storage Areas are two non-contiguous areas, one on the left side of the Restricted Area, and one on the right side of the Restricted Area.

**21. Appendix A – Soil Sampling Protocols – Flow Diagrams**

**Comment:** The flow diagrams do not include sufficient details to be considered standard operating procedures or protocols. An approved standard operating procedure or protocol should be included for site activities to ensure the quality of data to be obtained and integrity of the final report. It could be useful to include the flow diagrams in the sampling protocol. Please refer to Guidance for Preparing Standard Operating Procedures EPA QA/G-6 <http://www.epa.gov/QUALITY/qs-docs/g6-final.pdf>.

**Response:** The flow diagrams are supportive information, helpful in understanding the overall process. Because the site is in New Jersey, protocols have to (and will) follow the NJDEP Sampling Procedures Manual (August 2005).



**Response to Comments and Addendum to the OU2 HHRA Conceptual Site Model & Memorandum of Exposure Scenarios and Assumptions-Human Health Risk Assessment**

**General Comments:**

1. **Comment:** Please indicate in the title of the document that this CSM/MESA pertains only to OU2.

To reiterate a comment on the RI: EPA prefers that the revised human health risk assessment be performed after collection of the data gap samples and the subsequent report. Since much of the previous data is quite old (1990/1995), it is likely that surface soils have been disrupted and certainly, surface water/sediment data can considerably change over time. Current data should be used quantitatively (2009/2011) while the older data (1990/1995) may be used qualitatively.

**Response:** Operating Unit 2 is hereby added to the title of the document.

Please refer to the response to General Comment #1 in the comments on the Supplemental RI.

2. **Comment:** Please evaluate trespassers as current/future.

**Response:** Noted

3. **Comment:** Please evaluate current/future construction and utility workers instead of construction workers only as utility workers are likely to be exposed to the same contaminated media.

**Response:** Noted

4. **Comment:** The ages of receptors are confusing. Ages 1-6 is the standard for a young child. An older child/adolescent is typically 6-18 and an adult is 18+. Since these are the accepted EPA age groups when no MMOA chemicals are present, EPA requests that these be utilized for all non-MMOA contaminants. It is not completely unlikely that a child age 6-9 would also attempt to trespass. For the adult receptor, the exposure duration is listed as 24 years which is incorrect. If an adult is 18+ and the standard residential exposure duration is 30 years, it is assumed that the adult is exposed from ages 18 through 30, or 12 years. The older child/adolescent would be exposed for 12 years and the young child remains unchanged at 6 years.

**Response:** The adolescent trespasser age group has been changed to reflect a 6 –



18 year age range. However, the two residential receptors remain as a young child (0 – 6) and an adult. The adult receptor will be exposed for 24 years as per RAGS Part A guidance. The (18 +) label will be removed from the adult resident to eliminate confusion. In addition, it should be noted that this comment is inconsistent with comment 10 in which the Agency concurred with a 24 year exposure for the adult resident.

5. **Comment:** Please indicate the source of all equations.

**Response:** Noted.

6. **Comment:** Only provide a CTE exposure when risk associated with an RME exposure results in an unacceptable risk.

**Response:** Noted. That was the original intent, however, text has been added to clarify that CTE exposures will be evaluated only when RME exposure presents an unacceptable risk.

7. **Comment:** A site figure indicating the nearest residential communities would be helpful for the reader in understanding some of the exposure parameters.

**Response:** A site figure indicating the nearest residential areas has been added.

8. **Comment:** Please indicate in the text that while adults may also trespass that the adolescent trespasser is expected to be protective of the adult trespasser.

**Response:** Noted

9. **Comment:** Please provide more information on the Hudson Branch (e.g., depth, width, proximity to residences, etc.). This information will be necessary to determine whether the Hudson Branch may be used for swimming or wading scenarios.

**Response:** Please see responses to RI Workplan for additional info. TRC will include additional information on future human health risk documents. TRC would welcome a site visit by the EPA team to help illustrate site features.

10. Exposure Scenarios and Assumptions for RME

**Comments:**

The following values are acceptable:

For On-Site Industrial Worker

Exposure Frequency 250 days

Cancer Averaging time 25,550 days



For Construction Worker

Soil ingestion rate 330 mg/day

Body Weight 70 kg

Exposure frequency 250 days

Skin Surface Area 3300 sq cm

Cancer Averaging time 25,550 days

For Resident

Adult body weight 70 kg

Exposure Frequency, adult and child 350 days for ingestion and dermal

Child body weight 15 kg

Cancer Averaging time 25,550 days

Adult Non cancer Averaging Time of 8760, linked to 24 years should be 9,125 days

Adult Adherence Factor 0.07

Adult Skin Surface Area 5,700 sq cm

Child Adherence Factor 0.2

Child Skin surface Area 2,800 sq cm

**Response:** For Adult Resident Averaging Time –  $24 \times 365 = 8760$  days. Dividing  $9125/365 = 25$  years which is the averaging time for an industrial worker.

**Specific Comments:**

**1. Section 2.5, Current Trespassers, Page 2-8**

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**Comment:** “Play activities are expected to involve contact with surface soil outside of the fenced industrial area...” In the last sentence on page 2-8, it states that it is inappropriate to eliminate an exposure route from consideration due to the implementation of institutional controls. It is also inappropriate to eliminate an exposure route due to engineering controls. Additionally, in the future, this fence may not be present.

**Response:** Noted.

**2. Section 3.0, Memorandum on Exposure Scenarios and assumptions, Page 3-1**

**Comment:** In reference to the TARA table, please include only RAGS Part D tables in HHRA deliverables.

**Response:** TARA (Technical Approach for Risk Assessment) Tables refers to the RAGS Part D Planning Tables that are used in this risk assessment. Supplemental tables that are not RAGS Part D Tables may be presented in the HHRA (such as PEF calculations) which will be provided in support of a Planning Table.





**3. Section 3.2.1, Exposure Duration, Page 3-8**

**Comment:** Since the older child age group is now 6-18, the RME ED should be changed to 12 years. A CTE ED of 6 years, or half of the RME ED, is acceptable.

**Response:** Noted.

**4. Section 3.2.1, Exposure Frequency, Page 3-8**

**Comment:** Since several residences are located within ¼ mile from the site, a higher exposure frequency is expected. It is reasonable to assume that an adolescent trespasser could access the site 2 days per week in the summer and 1 day per week in the spring and fall. Please use 52 days as the EF for the adolescent trespasser.

**Response:** Noted.

**5. Section 3.2.1, Ingestion Rate, Sediments, Page 3-9**

**Comment;** It is anticipated that the sediment available for accidental ingestion is approximately 1/10<sup>th</sup> of that available through soil since the sediment must first pass through the water column. Please update ingestion rate to reflect this assumption.

**Response:** Noted.

**6. Section 3.2.1, Skin Surface Area, Page 3-9**

**Comment:** If a swimming scenario is added, full body skin surface area should be used.

**Response:** Exposure to surface water in the trespassing scenario is based upon wading in the Hudson Branch. The Hudson Branch is not deep enough to support a swimming scenario.

**7. Section 3.2.1, Soil Adherence Factor, Page 3-9**

**Comment:** A soil adherence factor of 3.3 mg/cm<sup>2</sup>-event was assumed. According to the RAGS Part E Dermal Guidance, when a high-end (i.e., reasonable but higher exposure) soil contact activity is selected, the central tendency weighted AF (i.e., 50<sup>th</sup> percentile) should be used for that activity. EPA recommends using the geometric mean of 0.2 mg/cm<sup>2</sup> for the children playing in wet soil exposure.

**Response:** Noted.

**8. Section 3.2.2, Exposure Duration, Page 3-10**

**Comment:** The recommended duration for an on-site worker is 9 years for the CTE.



Please use this value instead of the 6.6 years provided.

**Response:** Noted.

**9. Section 3.2.3, Soil Adherence Factor, Page 3-11**

**Comment:** For the construction worker, please use the construction worker geometric mean soil adherence factor of  $0.1 \text{ mg/cm}^2$  for the CTE value.

**Response:** Noted.

**10. Section 3.2.4, Soil Ingestion Rate (adult resident), Page 3-12**

**Comment :** The soil ingestion rate for an adult resident should be 100 mg/d. Please update text and tables as necessary.

**Response:** Noted.

**11. Section 3.2.4, Soil Ingestion Rate (young child resident), Page 3-14**

**Comment:** The soil ingestion rate for a child resident should be 200 mg/d. Please update text and tables as necessary.

**Response:** Noted.

**12. Table 1**

**Comment:** A resident is assumed to only be in contact with surface soil (0-2 feet). Only the construction/utility worker scenario should be evaluated for exposure to subsurface soils.

**Response:** TRC respectfully disagrees with this comment. There are currently no residences on the SMC Site, thus future redevelopment/construction activities would need to occur, including disturbance of subsurface soils and redistribution of those soils onto the surface during construction activities. Therefore, as a result of the redistribution of those soils, a Future Resident may be exposed to combined surface/subsurface soils as a result of construction activities. We propose to take this approach in additional human health risk documents.

**13. Table 1**

**Comment:** It is unclear why the ingestion and dermal pathways were not selected for the on-site worker when they were selected in Figure 2. Additionally, while current activities are known, future site activities are not. These pathways should be quantitatively evaluated.



**Response:** Noted. Table 1 has been changed to reflect quantitative evaluation of the ingestion and dermal pathways.

**14. Table 1**

**Comment:** The rationale provided for not selecting the inhalation pathway for trespassers is not sufficient. While the property may currently be vegetated, it may not be in the future. This pathway should be quantitatively evaluated.

**Response:** Noted.

**15. Table 4.1 RME and elsewhere**

**Comment:** The exposure duration for a child resident for non-MMOA contaminants should be ages 0-6 (6 years). In the table the ED is 1-6. Please update text and tables as necessary.

**Response:** Noted.

**Response to Comments on the Quality Assurance Project Plan (QAPP)**  
**OU2 Supplemental Remedial Investigation (including Baseline**  
**Ecological Risk Assessment)**

**Specific Comments**

1. **Comment:** Investigation-derived waste sampling should be included in QAPP.

**Response:** Investigation derived waste (IDW) residuals will be containerized and sampled to make a hazardous waste determination. Following generation, the IDW will be containerized and staged adjacent and south of the treatment plan to await characterization. Based on the sampling results and consultation with the EPA Remedial Project Manager, a subsequent determination shall be made whether IDW can be placed on-site.

Personnel directly involved in equipment decontamination will wear appropriate protective clothing, as stated in the HASP. Used PPE and any gross solids removed from the equipment during the physical removal process shall be stored in a drum. The soap and water liquid wastes will also be stored in an appropriate drum or container. The diluted acid rinsate will be stored in an appropriate container or neutralized with a base and then placed in an appropriate drum. The solvent rinse wastewater shall be placed into an appropriate container or drum. The final rinse wastewater shall be emptied onto the ground.

All waste handling will be conducted in accordance with all applicable federal and state regulations. The containers used to store IDW will be new USDOT-approved drums classified as 1A1/Y 340/S (r equivalent lined with a 6-millimeter liner).

This information will be incorporated in a new Section 9.2.5 of the QAPP.

2. **Section 4.2, Communication Pathway, 2<sup>nd</sup> Paragraph, Page 4-1**

**Comment:** Please indicate how information that may result in a change in scope will be documented.

**Response:** Information that may result in a change in scope will be documented as discussed in Section 4.2.1 of the QAPP. No changes to the QAPP will be required on the basis of this comment.

3. **Section 4.2.1, Modification of Approved QAPP, 1<sup>st</sup> Paragraph, Page 4-2**

**Comment:** The statement is made that revisions will reflect the date of change in the control block in the upper right corner of each page of the QAPP. However, only the month and year are included in control block. Please include full revision date including the day in control block of each page of QAPP.



**Response:** The date in the control block will be revised to include the month, day and year.

**4. Section 4.2.1, Modification of Approved QAPP, 2<sup>nd</sup> Paragraph, Page 4-2**

**Comment:** An example of the phone log form that will document immediate QAPP changes should be included.

**Response:** An example phone log will be included in Section 4 of the QAPP.

**5. EPA-NE QAPP Worksheet #5, Page 4-9**

**Comment:** The drilling subcontractor and surveying subcontractor should be added to the Project Organization Chart.

**Response:** A surveying subcontractor will not be required as this task will be performed by TRC. The anticipated drilling contractor (East Coast Drilling, Inc.) will be added to the Project Organization Chart. However, a footnote will be added stating that other qualified subcontractors may be substituted due to schedule availability or specific equipment requirements.

**6. Section 6.1, Project Quality Objectives, Last Bullet, Page 6-2**

**Comment:** Please clarify/correct discrepancy. NJDEP Ecological Screening Criteria is referenced as being used for surface water, however, the RI Work Plan specifies NJDEP Surface Water Quality Criteria, N.J.A.C. 7:9B for FW2 Waters, November 2009 (Pages 13 and 21 of OU2 Supplemental RI Work Plan).

**Response:** As per the website, <http://www.nj.gov/dep/srp/guidance/ecoscreening/>, the “NJDEP Ecological Screening Criteria” is the correct reference. Therefore, the RI Work Plan will be updated to be consistent with the QAPP. No changes will be made to the QAPP on the basis of this comment.

**7. QAPP Worksheet #11, Page 6-8**

**Comment:** The data archival process is not described in Section 13.0. Please include additional details about data management, backup, retention time and archival process.

**Response:** Section 13 of the QAPP will be updated with the following information: Electronic data deliverables (EDDs) will be provided by the laboratories for all analytical results. The EDDs will be in a GISKey format which will allow the data to be easily imported into TRC’s SQL Server database. All data will be stored in this database and this database will be used to tabulate and analyze project data for various needs, including risk assessment and preparation of figures. The use of this database ensures data integrity and accuracy for all future data needs. In addition to this, electronic pdf copies of all laboratory data packages will be submitted by the laboratories on CD and



will be stored by TRC with the project files, in the event further data evaluation is needed at any time. TRC's policy is to retain all project files for a period of six years beyond project completion. All files will be stored with the TRC-Philadelphia, PA office.

**8. QAPP Worksheets #12-1 through 12-12, Pages 6-9 through 6-24**

- a. Comment:** A reference should be included to the section of sampling procedures or SOPs.

**Response:** QAPP Worksheets #12-1 through 12-12 will be updated to reference the sampling procedure section of the QAPP, as applicable.

- b. Comment:** Please include temperature blank as a QC sample (as indicated on Page 6-4).

**Response:** Temperature blanks will be included as a QC sample on QAPP Worksheets #12-1 through 12-12.

**9. QAPP Worksheet #13, Page 7-2**

**Comment:** Please indicate how the secondary data will be used and if any data limitations exist (see Page 56 of UFP-QAPP Manual).

**Response:** As stated in Section 7.0, these data were used to design the current sampling program. TRC has assessed the usability of all historical data to determine potential limitations, etc. with the data. The results of this assessment were taken into account during the design of this sampling program. No changes to the QAPP are required on the basis of this comment.

**10. QAPP Worksheet #15-1 and Worksheet #15-7, Pages 8-5 and 8-17**

**Comment:** Typo, Isophorone CAS Number should be "78-59-1" not "79-59-1".

**Response:** The Isophorone CAS Number will be corrected, as indicated in the comment.

**11. QAPP Worksheets #15-1 through 15-14, Pages 8-5 through 8-32**

**Comment:** Since there are some compounds that have Project Quantitation Limit (PQL) greater than the Project Action Limit (PAL) as indicated in bold on the worksheets, please provide an explanation on how the analytical results for these compounds will be evaluated. Were options to lower the PQL to meet the PAL discussed with the contracted laboratories?

**Response:** The evaluation of results for analytes with PQLs above PALs and potential lower PQLs for these analytes is discussed below by matrix and parameter.



Sediment/SVOCs: 2-Chlorophenol, 2,4-dimethylphenol, 2,4-dichlorophenol, acenaphthylene, acenaphthene, 2,4-dinitrotoluene, hexachlorobenzene, atrazine, 3,3'-dichlorobenzidine, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene exhibit PQLs above the EPA Region III BTAG PAL with a few also above the NJDEP Ecological Screening Criteria. As per Section 13.3 of the QAPP, laboratories will report positive results between the MDL and PQL, if detected. For the majority of these compounds, the MDLs are below the Region III BTAG PAL and therefore these compounds would be reported down to this PAL, if detected. With the exception of the PAHs, these compounds are not contaminants of concern at the site and therefore further options were not pursued to lower the PQLs.

Sediment/Pesticides: Toxaphene exhibits a PQL above the EPA Region III BTAG PAL. Since this compound is not a contaminant of concern at the site, further options were not pursued to lower the PQL.

Sediment/PCB Aroclors: Aroclor 1016 and Aroclor 1260 exhibit PQLs above the NJDEP Ecological Screening Criteria. Since the PQLs for total PCBs are still below all PALs, further options were not pursued to lower the PQLs for these two individual Aroclors.

Sediment/Metals and Soil/Metals: Arsenic exhibits a PQL slightly above the EPA RSL for Industrial Soil. As per Section 13.3 of the QAPP, laboratories will report positive results between the MDL and PQL, if detected. The MDL of arsenic is below the EPA RSL PAL and therefore arsenic would be reported down to this PAL, if detected. Therefore further options were not pursued to lower the PQL.

Soil/VOCs: Ethylene dibromide and 1,2-dibromo-3-chloropropane exhibit PQLs above the NJDEP Non-residential Direct Contact Soil Remediation Standards and/or the EPA RSLs for Industrial Soil. As per Section 13.3 of the QAPP, laboratories will report positive results between the MDL and PQL, if detected. For both of these compounds, the MDLs are below the PALs and therefore these compounds would be reported down to these PALs, if detected. In addition, these compounds are not contaminants of concern at the site. Therefore, further options were not pursued to lower the PQLs.

Surface Water/VOCs: Vinyl chloride, carbon disulfide, carbon tetrachloride, 1,2-dichloroethane, benzene, 1,2-dichloropropane, bromodichloromethane, cis-1,3-dichloropropene, trans-1,3-dichloropropene, tetrachloroethene, dibromochloromethane, and 1,2-dichlorobenzene exhibit PQLs above the NJDEP Ecological Screening Criteria and/or the EPA Region III BTAG PAL. As per Section 13.3 of the QAPP, laboratories will report positive results between the MDL and PQL, if detected. For the majority of these compounds, the MDLs are below the PALs and therefore these compounds would be reported down to these PALs, if detected. In addition, none of these compounds are contaminants of concern at the site. Therefore, further options were not pursued to lower the PQLs.

Surface Water/Metals: Antimony, arsenic, barium, beryllium, cadmium, cobalt, lead, mercury, selenium, silver, and thallium exhibit PQLs above one or more of the three





PALs. As per Section 13.3 of the QAPP, laboratories will report positive results between the MDL and PQL, if detected. For the majority of these metals, the MDLs are below the PALs and therefore these compounds would be reported down to these PALs, if detected. With the exception of arsenic and lead, these metals are not contaminants of concern at the site. For lead, the PQL is just slightly above the PAL. For arsenic, the PQL is just slightly above one of the PALs and the other PAL would not be achievable even with a different methodology. Therefore further options were not pursued to lower these PQLs. For cadmium and selenium, it should be noted that the more sensitive ICP/MS technique is being utilized; due to analytical limitations, lower PQLs would not be possible.

Section 6.2.6 of the QAPP will be updated to include the above explanations.

**12. QAPP Worksheets #15-4, #15-10, #15-13 and #15-13a, Pages 8-11, 8-23, 8-29 and 8-31**

**Comment:** Typos, Cadmium and Copper CAS Numbers should start with “7440” not “7740”.

**Response:** The Cadmium and Copper CAS Numbers will be corrected, as indicated in the comment.

**13. QAPP Worksheets #15-6 and #15-12, Pages 8-15 and 8-27**

**Comment:** Typo, Xylenes (total) CAS Number should be “1330-20-7” not “95-47-6”.

**Response:** The Xylenes (total) CAS Number will be corrected, as indicated in the comment.

**14. QAPP Worksheets #15-12 through 15-14, Pages 8-27 through 8-32**

**Comment:** Note 2 on bottom of page – Should specify that only chronic values are listed.

**Response:** Footnote #2 on Worksheets #15-12 through 15-14 will be updated to specify that only chronic values are listed.

**15. QAPP Worksheet #15-12, Page 8-27**

**Comment:** Xylenes (total) – Column 3 PAL should be “13” for Xylenes (total) not “1.8” which is for the individual isomer meta-xylene (see [http://www.epa.gov/reg3hwmd/risk/eco/btag/sbv/fw/R3\\_BTAG\\_FW\\_Benchmarks\\_07-06.pdf](http://www.epa.gov/reg3hwmd/risk/eco/btag/sbv/fw/R3_BTAG_FW_Benchmarks_07-06.pdf)).

**Response:** The PAL for Xylenes (total) will be corrected, as indicated in the comment.

**16. QAPP Worksheet #15-15, Page 8-33**



**Comment:** Typo, Copper CAS Number should start with “7440” not “7740”.

**Response:** The Copper CAS Number will be corrected, as indicated in the comment.

**17. QAPP Worksheets #18-1 through 18-7, Page 9-6 through 9-25**

**Comment:** Sample Collection Protocol – Please include sampling SOPs per Page 66-67 of UFP-QAPP Manual Section 3.1.2. SOPs should be included for all project sampling tasks, including, but not limited to, sample collection, sample preservation, equipment cleaning and decontamination, equipment testing, inspection and maintenance, supply inspection and acceptance, sampling of investigation derived wastes, and sample handling and custody.

**Response:** In general, TRC will be following protocols for project sampling tasks as detailed in the New Jersey Department of Environmental Protection Field Sampling Procedures Manual (August 2005). Therefore, the preparation of SOPs for this program should not be required. However, step-by-step sampling procedures are included in Section 9.2 of the QAPP to provide additional guidance to the field team. Section 9.3 of the QAPP provides details on equipment cleaning and decontamination procedures. Sample preservation is detailed in Worksheet #19 of the QAPP. Equipment testing, inspection and maintenance and supply inspection and acceptance criteria are detailed in Sections 9.4, 9.5 and Worksheet #22 of the QAPP. Sample handling and custody are detailed in Section 11 of the QAPP. Sampling of IDW will be described in Section 9.2.5 of the QAPP, as described in Comment #1.

**18. QAPP Worksheet #19 , Page 9-43**

**Comment:** A note should be added to bottom of page to indicate location of analytical laboratory SOPs (Accutest Laboratories and Alpha Analytical Laboratory).

**Response:** A note will be added to the bottom of Worksheet #19 to indicate the location of the analytical laboratory SOPs (Appendix E of the QAPP).

**19. QAPP Worksheets #24 and #25, Pages 10-8 through 10-11**

**Comment:** The worksheets for analytical instrument calibration should be separate from analytical instrument testing, inspection and maintenance. The combined worksheets did not have the required maintenance frequency information.

**Response:** The required maintenance frequency information was included for some of the maintenance activities. The QAPP Worksheet will be revised so frequency information is included for all maintenance activities. However, it should be noted that many of these activities will be performed on an as needed basis and not at a specified frequency. As all information is present in QAPP Worksheets # 24 and 25, these worksheets will still be submitted as one worksheet.



**20. QAPP Worksheet 23, Page 10-7**

**Comment:** Analytical SOPs referenced (L-1 through L-13 and F-1 and F-2) should be included as attachment to the QAPP. Per UFP-QAPP Manual Page 71, Section 3.2.1 “all analytical procedures that will be used in the project must be documented in the QAPP or attached document(s) to allow for review and approval”.

**Response:** The referenced analytical laboratory SOPs (L-1 through L-13) will be included in the QAPP in Appendix E. The applicable sections of the NJDEP New Jersey Department of Environmental Protection Field Sampling Procedures Manual (F-1 and F-2) will also be included in Appendix E.

**21. Section 11.2.2, Sampling Identification and Labeling, Page 11-5**

**Comment:** Sample Identification and Labeling should specify the information listed in the 9 bullets on Page 45 of the RI Work Plan.

**Response:** The 9 bullets on page 45 of the RI Work Plan will be included in Section 11.2.2 of the QAPP.

**22. QAPP Worksheet #26, Page 11-12**

**Comment:** The Biological Sample Storage information was listed as “Not applicable”. However, Section 9.2.4 indicated that aquatic vegetation, aquatic invertebrate, and terrestrial invertebrate samples will be collected. Please revise the information.

**Response:** The Biological Sample Storage information will be revised to state “60 days after delivery of data package”.

**23. QAPP Worksheets #28-1 through #28-11, Pages 12-5 through 12-17**

**Comment:** Temperature Blanks and Field Blanks should be included in the QC Sample Table.

**Response:** Cooler temperature blanks and field blanks (equipment blanks and trip blanks) will be added to Worksheets #28-1 through 28-11.

**24. Section 13.0, Data Management Tasks, Page 13-1 through 13-5**

**Comment:** The information provided should include database management to support human health and ecological risk assessments as indicated on Page 8-1.

**Response:** As stated in response to comment #7, laboratory EDDs will be in a GISKey format which will allow the data to be easily imported into TRC’s SQL Server database. All data will be stored in this database and this database will be used to tabulate and



analyze project data for various needs, including but not limited to risk assessment. The use of this database ensures data integrity and accuracy for all future data needs.

**25. QAPP Worksheet #29, Page 13-5**

**Comment:** The information provided should include all project documents and records such as Daily Personnel Logs, Photographs, Health and Safety Logs, Data Usability Assessment Report, Site Characterization Summary Report for OU2 Supplemental RI, electronic data deliverables, database to support human health and ecological risk assessments, decontamination records, calibration records, boring logs, sample disposal and waste manifests, laboratory data packages (to include case narratives, sample results, QC summaries, raw data), subcontract laboratory certifications, data validation SOPs, TSA report and data package completeness checklist.

**Response:** Worksheet #29 will be updated to include the additional documents and records, as applicable to this program.

**26. QAPP Worksheet #32, Page 14-8**

**Comment:** The worksheet should indicate when/how regulatory agencies (NJDEP and EPA) will be notified of corrective action.

**Response:** As per Section 4.2 of the QAPP, The TRC Project Manager will notify the TRC Project Coordinator of any issues which may potentially affect the achievement of project objectives. The TRC Project Coordinator will in turn notify the EPA Remedial Project Manager of these issues. Therefore, regulatory agencies may not be notified of all corrective actions, only those that may affect the achievement of project objectives. If Field Sampling TSAs or Fixed Laboratory TSAs are performed, these will be performed at the onset of the program to ensure any potential corrective actions are in place as soon as possible.

**27. QAPP Worksheet #33, Page 15-2**

**Comment:** The information should indicate if a form/report is filled out for an immediate change to work in the field such as a field change request form.

**Response:** An immediate change to work in the field would not be documented on a specific form/report. Due to the immediate nature of the change, this would be communicated verbally through the Daily Verbal Status Reports currently listed on Worksheet #33 and would be documented in the field logbook.

**28. QAPP Worksheet #34, Page 16-5**

**Comment:** The Verification Input should include QAPP and Electronic Data Deliverables.



**Response:** Worksheet #34 will be updated to include QAPP and Electronic Data Deliverables.

**29. Worksheet #35, Page 16-6**

**Comment:** The Validation Input should include chain of custody, laboratory data package, field duplicates (to calculate RPD), data narrative, audit report and field data.

**Response:** The majority of the requested information for Validation Input (chain-of-custody, laboratory data packages [which include case narratives]), audit reports, and field data) are already included in the first step (Step I) of the Verification Process (Worksheet #34). This is also in accordance with the example provided in the UFP QAPP Manual (Figure 28 in the UFP QAPP Manual). Field duplicates are already included on Worksheet #35 in row #5 (Documentation of QAPP QC Sample Results); based on this row, field duplicates are QAPP-required QC samples and will be evaluated to ensure samples were collected and were within the acceptance limits. No changes to the QAPP are required on the basis of this comment.

**30. Section 17.1, Usability Assessment, Page 17-1**

**Comment:** This section should include the assessment of RPD calculation for field duplicate samples.

**Response:** The assessment of the RPD calculation for field duplicate samples is already included in Section 17.2 of the QAPP. Worksheets #12-1 through 12-12 provide the RPD criteria for field duplicates for each parameter. No changes to the QAPP will be required on the basis of this comment.

**31. Section 17.3, Accuracy, Page 17-1**

**Comment:** This section should include the evaluation of field blanks and laboratory blanks to assess bias or contamination.

**Response:** Section 17.3 already states that if field or laboratory contamination exists, the impact on the data will be evaluated during the data usability assessment and the direction of bias for contamination will be identified. Worksheets #12-1 through 12-12 Worksheets #28-1 through 28-11 provide acceptance criteria for field blanks and laboratory blanks. No changes to the QAPP will be required on the basis of this comment.

**32. Section 17.4, Representativeness, Page 17-2**

**Comment:** This section should include the review of adherence to sampling procedures, QAPP, and audits to assess the representativeness of the sampling program.

**Response:** The review of adherence to sampling procedures, QAPP requirements and



audits, if performed, will be used to assess the representativeness of the sampling program.

**33. Section 17.6, Completeness, Pages 17-2 through 17-3**

**Comment:** This section should include PQO for completeness 90% field, 95% laboratory (see Page 6-7).

**Response:** The goals for field and laboratory completeness will be added to Section 17.6 of the QAPP.

**34. Appendix B**

**Comment:** This appendix only includes soil logging form. Please include examples of all field forms for recording water quality parameters, surface water flow and sampling information, calibration forms, sample collection forms, decontamination logs, and any other field measurement forms that will be used. Example of daily personnel log, equipment calibration log, health and safety log (as indicated on Pages 11-1 through 11-4) should be included.

**Response:** Section 11 of the QAPP specifies that a field logbook entry may be used in lieu of a Photograph Log, Equipment Calibration Log, and Health and Safety Log. At this time, TRC plans to use the field logbook for these entries and therefore will not be submitting log forms for these activities. Calibration, sample collection, and decontamination procedures will be detailed in the field logbook, as outlined on pages 11-2 and 11-3 of the QAPP. Water quality parameters will be measured in surface water and will be recorded in the field logbook.

## **Response to Comments and Addendum to the Draft Revised Screening-Level Ecological Risk Assessment (SLERA)**

### **General Comments:**

#### **1. Comment:**

Reference sample locations for both sediment and surface water samples should comply with NJDEP's "Guidance for Sediment Quality Evaluations" (11/98), Section 2.3 - Chemical Characterization of Upgradient and/or Offsite Reference Conditions, as follows:

For upgradient and offsite reference locations, NJDEP recommends the collection of a minimum of three (3) to five (5) samples to establish a range of reference location contaminant concentrations (the larger number of samples is recommended due to sediment heterogeneity). Samples shall be collected from areas outside the site's potential influence. The samples must not be collected from locations directly influenced by or in close proximity to other obvious sources of contamination (i.e., other hazardous waste sites, sewer/storm water outfalls, tributaries, other point and non-point source discharges, etc.). If a local reference site is included in the sampling plan, it must be of comparable habitat to the study area. At a minimum, upgradient and local reference samples shall receive the same chemical analyses as site-related samples. Additional determinations, such as benthic community structure, may be required on a case-by-case basis.

The entire guidance document can be found on the NJDEP's website at <http://www.nj.gov/dep/srp/guidance/sediment>.

**Response:** *The proposed surface water and sediment reference area locations are compatible with NJDEP's guidance for reference site selection. A total of eight (8) reference surface water and sediment samples will be collected within Burnt Mill Branch which has comparable habitat characteristics to the Hudson Branch. The surface water and sediment reference samples will be collected at locations outside the Site's potential influence and will not be located in proximity to other obvious sources of contamination. Surface water and sediment samples will receive the same chemical analyses as site-related samples.*

### **Specific Comments:**

#### **1. Section 2.2.3, PCOPEC Selection, Page 2-14**

**Comment:** Constituents detected in less than 5 percent of samples were not retained as PCOPECs. Potential contaminants of concern (COCs) should not be eliminated based on frequency of detection. Screening COCs based on the frequency of detection can eliminate appropriate consideration of small areas of high contaminant concentration





(‘hot spots’). Additionally, it is noted that essential nutrients were eliminated from further consideration. All chemicals detected in media for which complete exposure pathways exist to ecological receptors should be evaluated in the screening-level phase of the assessment. There is a potential for even >naturally= occurring levels of chemicals to affect the cumulative risk present in an ecosystem by increasing the stress on receptors utilizing that habitat. Therefore, essential nutrients should not be excluded from consideration.

**Response:** *Essential nutrients and constituents detected in less than 5% of samples will be retained for evaluation in the revised SLERA/BERA by comparing maximum detected concentrations with appropriate screening benchmarks (if available). Frequency of detection will be considered in Step 3A of the SLERA which refines the PCOPECs initially identified in the SLERA.*

## **2. Section 2.6, Site Conceptual Model, Page 2-27**

**Comment:** It appears that fish were not included in the Site Conceptual Model. However, it is noted in the Complete Exposure Pathways section (section 2.5) that aquatic organisms such as fish and macroinvertebrates that inhabit the aquatic habitat provided by the Hudson Branch adjacent to and downstream of the Site are directly in contact with PCOPECs present in surface water and sediment and/or potentially feed on organisms residing there. Therefore, fish should be included in the Site Conceptual Model.

**Response:** *Fish will be included in the Site Conceptual Model for the revised SLERA/BERA and evaluated (along with pelagic aquatic invertebrates) as an assessment endpoint.*

## **3. Section 2.6, Site Conceptual Model, Figure 2-7**

**Comment:** Based on the illustration of the Site Conceptual Model on Figure 2.7, ground water does not connect with the Hudson Branch. However, it is noted on page 2-27 (Complete Exposure Pathways section) that the evaluation of surface water and sediment includes contamination transported through ground water discharge. This discrepancy should be corrected.

**Response:** *Figure 2.7 will be revised to include a ground water discharge to surface water pathway.*

## **4. Section 2.6.1, Assessment Endpoints, Page 2-28**

**Comment:** The assessment endpoints that were provided in the document do not include the consideration of piscivores. Since fish, as indicated previously, are noted to inhabit the area, piscivores should be incorporated into the assessment endpoints.

**Response:** *Although fish may be present within limited portions of the Hudson Branch*



*(e.g., ponded areas which comprise only a small portion of the aquatic habitat provided by the Hudson Branch), fish populations are unlikely to be significant to support piscivorous receptors. Fish have not been observed within the stream habitat present within the Hudson Branch during previous ecological investigations or prior sampling events. The small size of the stream and shallow depths present throughout most of its length preclude the presence of significant fish populations that would provide a forage base for piscivorous wildlife. Fish are likely to be present in substantial numbers within the ponded portions of the Hudson Branch which only include Burnt Mill Pond and a very small pond formed by impounding the Hudson Branch at a location south of West Arbor Avenue and east of North West Avenue. This very small pond is insufficient for supporting piscivorous receptors. Burnt Mill Pond, which is located at the junction of the Hudson Branch and Burnt Mill Branch, likely supports a substantial fishery that may be utilized by piscivorous wildlife. However, Burnt Mill Pond is located at the terminus of the Hudson Branch which contains decreasing COPEC concentrations from its origin at the SMC Facility. In addition, Burnt Mill Pond was recently dredged in 2006 which likely resulted in reduced exposure by fish to COPECs. This information will be provided in the revised SLERA/BERA.*

#### **5. Section 3.2, Sediment Quality Benchmarks, Page 3-2**

**Comment:** The comparison of contaminated sediment concentrations to ecologically based literature screening values involved the use of the severe effect levels (SELs) from Persaud (D. Persaud, et al. August 1993. "Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario." Ontario Ministry of Environment and Energy). Considering the inherently conservative nature of screening level ecological risk assessments, the comparison to screening values should also include the lowest effect levels (LELs).

**Response:** *Conservative screening sediment benchmarks (which included LELs) were used to initially select sediment PCOPECs and to evaluate risk to benthic macroinvertebrates. Less-conservative screening benchmarks (which included SELs) were only used in Step 3A of the SLERA.*

#### **6. Section 3.2, Sediment Quality Benchmarks, Page 3-2**

**Comment:** The mean organic carbon content of the Hudson Branch sediments (10.0 percent) was used to determine the toxicity reference values (TRVs). Further justification should be provided regarding why sample-specific total organic carbon data were not used for calculating these values.

**Response:** *The revised SLERA/BERA will present less conservative sediment benchmarks in Step 3A that are based on either sample-specific total organic carbon data or the lowest reported total organic carbon content for those samples where PCOPECs (PCBs and DDT and its derivatives) were analyzed or detected. The lowest reported total organic carbon content (1.26% at sediment sample SD24-01) results in sediment benchmarks that are above the maximum detected concentrations of all*



*PCOPECs.*

**7. Section 2.1.3.2, Terrestrial Habitat Receptors, Page 2-9**

**Comment:** It is noted that NJDEP Natural Heritage Program were contacted regarding their resources. A Copy of the letter from this Agency should be provided in an appendix of the SLERA.

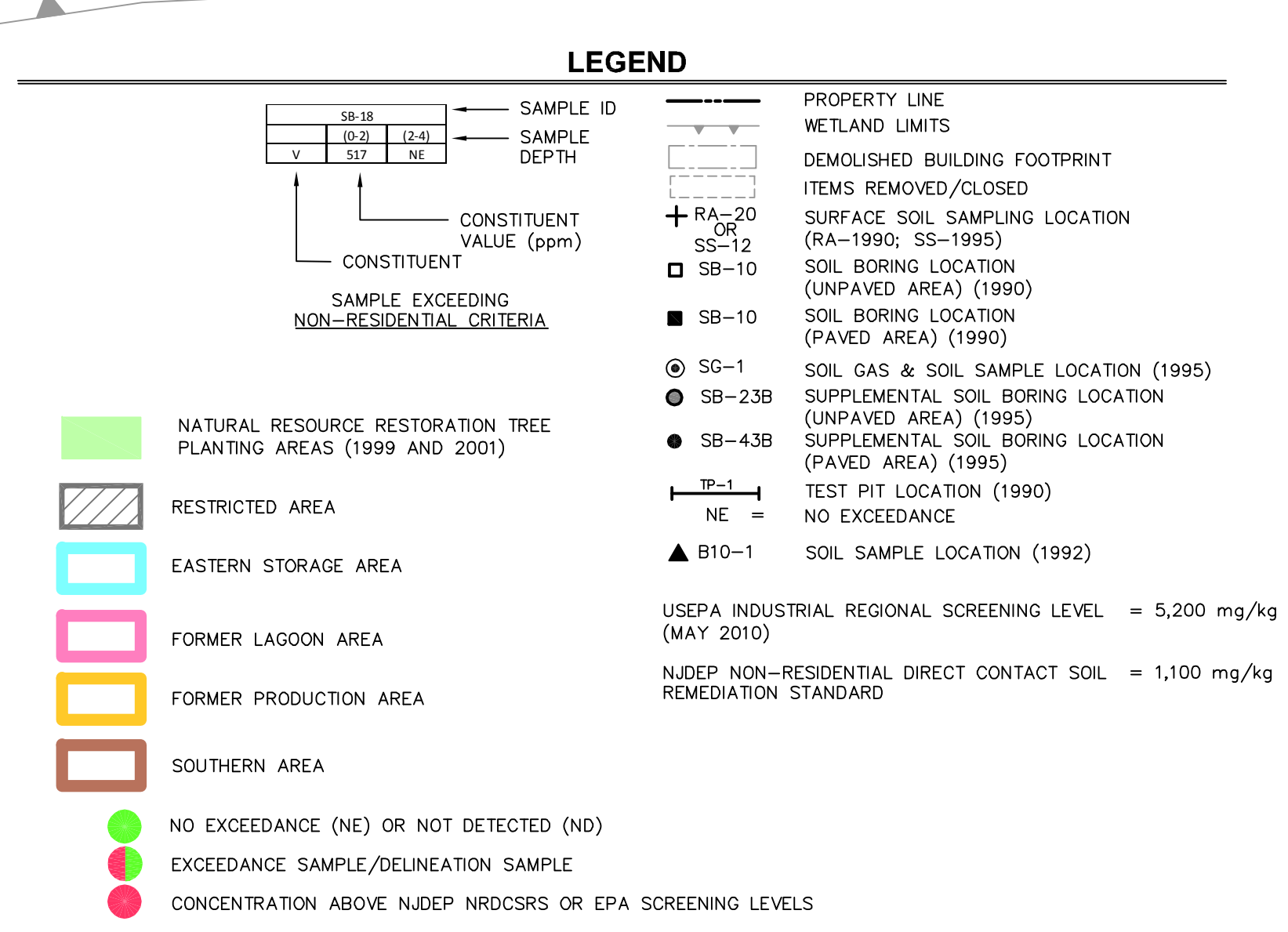
**Response:** *A copy of the NJDEP Natural Heritage Program response will be provided as an appendix within the revised SLERA/BERA.*


**8. Appendix C**

**Comment:** Burnt Mill Pond is not included in the additional sampling that is proposed. Further information should be provided to justify this exclusion.

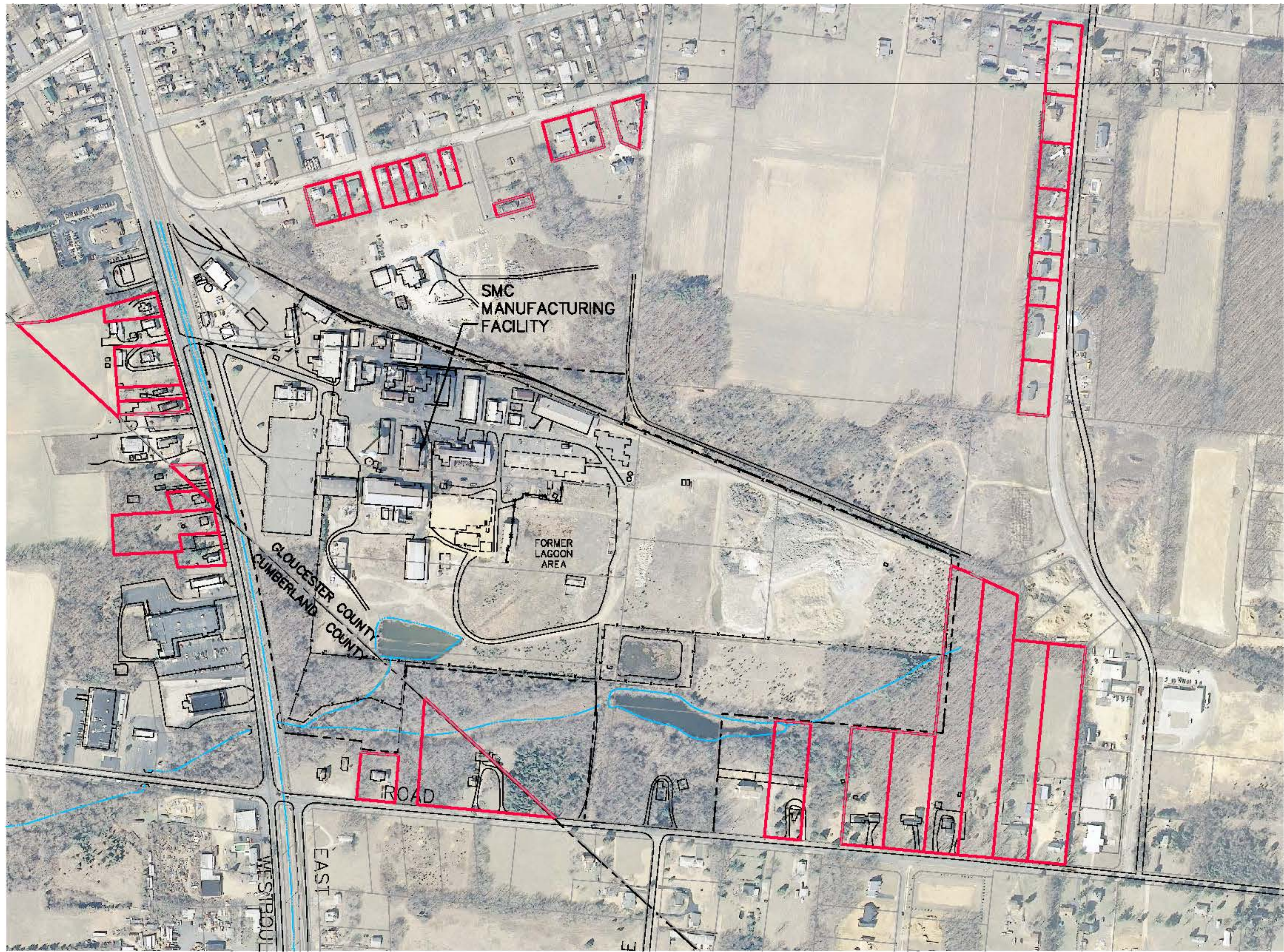
**Response:** *Please see the rationale offered in the general comments and the RI specific comments.*





 <b>TRC ENVIRONMENTAL CORP.</b> 57 East Willow Street Millburn, New Jersey 07041		
VANADIUM SOIL SAMPLING RESULTS		
SHIELDALLOY METALLURGICAL CORPORATION NEWFIELD, NEW JERSEY		
JOB NO.: 2710ES-112434		
JG/LB	DATE: AUGUST 2011	FIGURE:

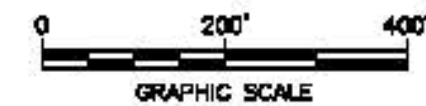




**LEGEND**

- PROPERTY LINE
- NEAREST RESIDENTIAL PROPERTIES TO THE SMC FACILITY
- TAX LINE

SOURCE:  
BASE MAP FROM JAMES M. STEWART, INC., LAND SURVEYORS,  
PHILADELPHIA, PA. AND ON-SITE OBSERVATIONS.  
LACROCE PROPERTY BOUNDARY BASED ON TAX MAP-CITY OF  
VINELAND, OCTOBER 1, 1971.  
ORTHOPHOTOS FROM NEW JERSEY 2007 - 2008 HIGH RESOLUTION  
ORTHOPHOTOGRAPHY, NJ OFFICE OF INFORMATION TECHNOLOGY  
(NJGIT)



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JG/LB DATE: AUGUST 2011 FIGURE: